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PROBLEMS IN ESTIMATING THE VALUE
OF HOUSEHOLD WORK



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"We are more closely linked to the invisible than to the visible"
Novalis.

I.- INTRODUCTION

The quantitative description of social systems is a broad and complicated task. Value judgements play as an important a role as the analytical aspects and the more purely statistical ones.

The present state of social accounting reflects the predominance of economic ideology, that is to say, it selects and emphasises those activities that are incorporated in a material and/or salable product.

The 'social product' of Classic Economists or the national income of Marshall, was the key concept around which Pigou was to build his 'Welfare Economics' (1920), or 'New Plutology' as J. Hicks suggests. The definition of the real social product, how it can be increased and how it is divided up constituted for Hicks, a 'research programme' in the Lakatos sense (1).

On the other hand, the Keynesian Revolution contributed decisively to the move of national income statistics to the national accounts.

At the end of the 40's the first attempts to standardise national accounting practices were made by the OEEC and the UN who were to set the stage for the UN system of National Accounting and Supporting Tables. Later, some revisions were to take place. The third and most important one paved the way for the current version of the UN system of National Accounts published in 1968 (SNA and MPS). In 1969, 'Toward a Social Report' (2) was also published. It was the first fruit of the 'Social Indicators Movement'.

- (1) J. Hicks. 'Revolutions in Economics' in 'Classics and Moderns' Collected Essays on Economic Theory. Vol III (Basil Blackwell. London 1983)
p. 13
- (2) U.S. Department of Health, Education and Welfare. (Washington. 1969)

The concern for the quality of life, a common chord heard throughout all the industrialized western societies during the early 70's, produced a wave of dischord (partly represented by the New American Left) about the use of National Accounting as a framework for measuring the results of a national economy. It stressed the great deficiencies of GDP per capita as a welfare indicator or even as an indicator of the productive capacity of a nation.

This criticism was to cause a chain of reactions, many of them defensive, which brought about proposals for new measures of economic welfare (like the MEW of Nordhaus and Tobin) (1). Systems of Accounts with vastly expanded measures of consumption and investment also arose (2). All this aims to enlarge the conventional national accounts without rejecting the underlying economic theory. This is precisely what differentiates this kind of research from that of the social indicators.

The estimate of the monetary value of home output constitutes one of the first tasks that the proposals for new measures of economic welfare and for extended Accounts should carry out. Little wonder that the interest economists have shown in the family as a decision unit and/or as an institution which performs a series of functions that have an economic value, has become notably stronger over the last twenty years (3).

- (1) W. Nordhaus and J. Tobin 'Is Growth Obsolete' (National Bureau of Economic Research, N. York (1972)
- (2) See R. Eisner 'Extended Accounts for National Income and Product'. Journal of Economic Literature. December 1988.
- (3) See G.S. Becker. 'A Treatise on the Family' (Harvard University Press. Cambridge 1981); R.A. Pollak "A Transaction Cost Approach to Families and Households" Journal of Economic Literature. June 1985; R. Gronau 'Home production-a forgotten industry'. Review of Economics and Statistics. August 1980.

II.- PROBLEMS OF SCOPE AND VALUATION

In the SNA, the production boundary includes all goods and services produced for the market, valued at market prices and all goods and services produced by government departments, valued at cost.

In industrialised countries, the value of unpaid household work is the main component of household production. Its traditional exclusion from GNP (suggested by Marshall) has given place to Pigou's Paradox and to biases in international and intertemporal comparisons of real income. Granted this as well as Women's arguments in favour of its inclusion in the GNP calculations, I consider that the problems of definition and valuation of non-market services within the home are extremely troublesome. Thus, I can not help but emphasize the words of an authority in the field of National Accounting, "I should not recommend that unpaid household services be included in the annual official accounts but I think the unofficial estimates made from time to time are useful as a reminder of the activity that is excluded (1)". One of the reasons why home production is difficult to measure lies in the heterogeneity of the services it consists of.

The first problem arises when we have to decide which household services should be included as 'output' and be given a monetary value. The selection criterion most used in order to draw a line of separation between the economic and non-economic activities is called the 'Third person principle'. According to this criterion, an economic activity is "one which could be done by a third person without reducing its final utility value". This statement is closely linked to the definition of the concept of service established by T.P. Hill for whom "Any service must be capable of being provided by one individual or economic unit for another, otherwise the possibility of a service as such does not

(1) R. Stone 'Social Accounting. The State of play! The Scandinavian Journal of Economics. 1986. No. 3. p. 457

exist. Any activity, which is such that it cannot by its very nature be delegated, or contracted out, to another individual or economic unit, must, therefore, be treated as intrinsically a non-service type activity". (1). Activities such as washing, cleaning, cooking, etc, can be performed for others and the individual has a choice of carrying out these chores him/herself or paying someone else to do it.

The importance that identity has within the family institution means, in many cases, that market services and home services are not perfect substitutes. This also creates problems when it comes to evaluating home output, as we will see later.

A second group of problems arises when we have to specify the relationships between inputs and outputs of household activities. The construction of input-output tables, similar to those used in industry, has proven to be an unmanageable task to date. It is difficult to set an adequate classification of household activities. Moreover, the vast flexibility and variety of production techniques of household services has made it impossible to determine the technical coefficients à la Leontieff, without resorting to arbitrary devices.

The existence of situations that could be described as "joint production" is a phenomenon recognised in the frequent commentaries of housewives having to carry out several chores at the same time. Hawrylyshyn connected this 'jointness' to the notion that an hour of time in housework activities often produces both direct and indirect utility. He considered that the direct utility components (mental relaxation, leisure on the job, feelings of love and so on) of household activities, should not be subject to monetary valuation. Thus, unpaid housework consists of "non-market activities which produce goods or services for the members of the household not desired in and of themselves, but rather for the utility which they

(1) J.P. Hill. "On Goods and Services". Review of Income and Wealth December, 1977. p. 326

field" (1). Economic household services are defined conceptually as those producing indirect utility.

Most empirical estimates that try to value household production, limit themselves to measuring the value of labour inputs employed in housework. This means that the problems that arise from evaluating the time spent become one of the crucial questions for measuring home production.

There are two basic approaches for evaluating household work done by family members at home.

- 1) Evaluating time inputs at their market opportunity costs, or
- 2) Evaluating time inputs at the market alternative.

The first method is based on the individual as a 'homo economicus' who assigns his time rationally to their various activities in such a way that, in equilibrium, he is able to attain the highest welfare possible. To the extent that the net marginal wage rate represents the value of time spent at work (for the market), then in equilibrium it also represents the value of time spent on home production.

One of the drawbacks of this method of evaluation, according to the majority of national income statisticians, is that it leads to a 'valuation paradox'. Hawrylyshyn has expressed it very clearly. "Consider two housewives with equivalent family sizes and homes, and suppose that they are both equally good at the work, doing the same amount in the same number of hours. This suggests the output value in both cases is the same. Yet if one of them has an M.A. in microbiology with a potential wage of \$10/hour and the other is a former stenographer, potentially employable at \$4/hour this method tells us the value of one's housework is 2.5 times that of the other!" (2).

- (1) O. Hawrylyshyn. 'Towards a Definition of Non-Market Activities'. The Review of Income and Wealth. 1977. No. 1. p. 89
- (2) O. Hawrylyshyn. The Value of Household Services. A Survey of Empirical Estimates. The Review of Income and Wealth. 1976. No. 2. p. 112

This paradox can be explained in this way (1). Let us suppose that time inputs do not affect utility directly, but we also suppose that home produced goods and market produced goods are not perfect substitutes. In this case, the microbiologist and the stenographer would place different values on their home output. The microbiologist regards her output as superior to the market substitute. She is ready to forgo 10 per hour of output, whereas other women, who place a lower value on their home output, are ready to forgo much less. In other words, the microbiologist regards herself as more efficient in home production than the stenographer. In general, the value of the marginal productivity at home of the employed person equals her wage rate and therefore their time inputs on home production should be evaluated according to this wage.

The Market Alternative Method values the time spent on housework at the price the household would pay for these services if it purchased them on the market. If we consider that the GNP is basically an indicator of productive capacity, this method seems to be the most adequate.

The two main variations of the Market Alternative Method are
 a) Market Alternative -Housekeeper Cost
 b) Market Alternative - Cost by Function Method (2)

The variant called 'Housekeeper Cost' assumes the hiring of a single individual to do all the housework.

(1) R. Gronau. "Home production. A Survey". in O.C. Ashenfelter and R. Layard (eds). Handbook of Labor Economics. Vol I (North Holland. Amsterdam, 1986) p. 297-298

(2) It is also called 'Individual Function Cost Method'.

Table 5 shows these results and the ratio of household work to GDP in Spain. Wide variations are observed in this ratio depending on the method of valuation chosen. Here, The Opportunity Cost Method gives higher estimates for the HW/GDP ratio than the Market Alternative one. Caillavet considered that the most reasonable estimates are those which give a HW/GDP ratio around 12-20 per cent. This means that she preferred the Market Alternative Method to The Opportunity Cost one.

Table 3 shows both estimates (E1) and (E2) of the 'amount' of household work performed by Spanish housewives in 1984, and Table 4 compares these figures with the time spent in work for the market by active housewives and by female population in the labour force (2)

TABLE 3

Caillavet Estimates of the 'amount' of household work

(in million hours)

E1	35.028
E2	33.718

TABLE 4

Household and Market work time in 1984

(in million hours)

<u>Household work</u>	<u>Housewives</u>	<u>Female Labour Force</u>
E1	35.028	----
E2	33.718	
Work for the MARKET	2.094	5.463
Work for the Market as a percent of household work		
According to E1	8.30	15.60
According to E2	8.61	16.20

Finally, in order to get a monetary estimate of the time spent in household work, Caillavet uses the Market Alternative Method as well as The Opportunity Cost Method.

- (2) Note that the 'amount' of household work made by the rest of the female members of the family has not been able to be estimated; you also have to take into account the importance of the 'black' or hidden economy in the employment of women.

9. Gardening, pet care.
10. Dealing with financial services and neighbour community management.

The time (hours per day) spent in household work by housewives according to that Survey is shown in Table 2.

TABLE 2

Household Work Time

(hours per day)

Non-Active Housewives..... 9,35

Active Housewives..... 6,04

In applying these averages to the housewife population shown in Table 1 we obtain a first estimate (E1) of the 'amount' of household work done by Spanish housewives in 1984.

Nevertheless, on the basis of some French time-budget studies (1), Caillavet distinguishes between a weekday and a weekend in her Second Estimate (E2) of the 'amount' of household work done by non-active and active housewives. The latter spend more hours in household work during the weekend than during the rest of the week. On the other hand non-active housewives reduce household work time on Sundays and increase their resting time. So, the Second Caillavet Estimate (E2) states that active housewives spend 6.04 hours per day in household work for six days a week and 9.35 hours on Sundays; whereas non-active housewives would spend 9.35 hours per day in housework from Monday to Saturday and 6.04 on Sundays.

- (1) A. Girard. 'Le budget-temps de la femme mariée dans les agglomérations urbaines'. Population. October-December 1959; and A. Girard and H. Bastide- 'Le budget-temps de la femme mariée à la campagne. Population April-June 1959.

TABLE IEstimate of Number of Housewives in 1984

		<u>Per cent</u>
Non-Active.....	9,162,797	84
Active	1,703,675	16
TOTAL.....	10,866,742	100

The use of the Survey on Family and Household Inequality for estimating the hours spent in housework by Spanish housewives brought about some difficult interpretation problems. This Survey is not a proper Time-Budget Survey.

The specific household tasks enumerated in the Survey are thirty-two, grouped in the following ten activities:

1. Shopping (every day consumer goods, semidurable and durable consumer goods)
2. Child-care (1)
3. House cleaning, washing the dishes, washing laundry, ironing.
4. Sewing and knitting tasks.
5. Food preparation, cooking, setting and clearing the table (breakfast, lunch, 'merienda', and supper).
6. Care to ill or handicapped relatives living in.
7. Car maintenance and transport for family trips.
8. Home repairs.

(1) It includes transport and taking to school and collecting, and parents-school relationships. It includes medical care, too.

III.- ESTIMATES FOR SPAIN

A.- The value of household work performed by Spanish housewives in 1984

The main phases of the method used by F. Caillavet (1) are:

1. Estimate of the number of housewives, distinguishing between the ones that belong to the labour force (active) and the ones that do not (non-active).
2. Estimate of the number of hours dedicated to housework by the housewives taking into account whether they are active or non-active.
3. Valuation of the time spent in housework by the Market Alternative Method and the Opportunity Cost Method.

The Survey for Housewives on Family and Household Inequality carried out by the Centre of Sociological Investigations in September 1984 (2) is the main source of data for the estimates of the 'amount' of household production made by F. Caillavet. On the bases of this Survey and the Survey on Labour Population (1984) of the National Institute of Statistics, an estimate of the number of active and non-active housewives is obtained.

Table 1 shows the results.

- (1) F. Caillavet: 'El Trabajo Gratuito de las mujeres: de la economía familiar a la economía nacional' in M. Angeles Durán /ed/ De Puertas Adentro (Ministry of Culture. Woman's Institute. Madrid. 1988)
- (2) Survey no 1433 of the Center of Sociological Investigations. The Survey which aims to be representative at a national level did 1992 questionnaires to women over 18, housewives (married or single), in a hundred and fifty sampling points with a 'random route' sampling system. In a second phase deeper interviews were carried out.

TABLE A

Methodologies of Estimation and Evaluation. [A]Opportunity Cost Method

$$[1] HW = W \left(\sum_{i=1}^n T_i \right)$$

$$[2] HW = W \left(\sum_{i=1}^n TM_i \right)$$

HW = Money value of household work.

W = Opportunity cost of time of individual doing household work.

T_i = Time spent in housework activity i .

TM_i = Minimum Necessary Time to perform activity i .

n = number of household work activities.

D = The market cost of a housekeeper.

Market Alternativea) Housekeeper Cost

$$[3] HW = D$$

b) Individual Function Cost

$$[4] HW = \sum_{i=1}^m D_i$$

D_i = Cost of hiring a number of market agents to perform the different household work services.

$$[5] HW = \sum_{i=1}^n T_i \cdot W_i$$

m = Number of market agents or specific services hired.

$$[6] HW = \sum_{i=1}^n TM_i \cdot W_i$$

W_i = Market wage for service equivalent to i .

Disaggregation is possible on the basis of different types of households (house size, number of children, income groups, age of children, geographic regions, rural-urban etc).

General Market Replacement Formula [B]

$$HFC = 52 \sum_{j=1}^K \sum_{a=1}^L \left[F_{ja} \cdot \sum_{i=1}^n (T_{jai} \cdot W_i) \right]$$

HFC = annual value of housework

F_{ja} = number of families in category ja

T_{jai} = time use per week in housework activity i by household of type ja .

W_i = hourly wage for market occupation equivalent to i .

NOTES-(SOURCES)

(A) O. Hawrylyshyn - 'Towards a definition of Non-Market activities'. The Review of Income and Wealth, 1977, N.1.

(B) O. Hawrylyshyn and H.J. Adler - 'Estimates of The Value of household work, Canada 1961 and 1971. The Review of Income and Wealth, 1978, 4.

In Table A various practical methodologies of evaluation of housework are shown.

In Spain, there has hardly been any economists' academic interest for questions related to the economics of unpaid housework. However, during the present decade several interdisciplinary studies about women have been published. These studies show a sharp vindicative character of women's rights.

The estimate of the value of housework performed by Spanish housewives has been one of the tasks included in the vindicative programme.

In the following section the methodology and results of F. Caillavet's estimates are described. On seeing the results she obtained, I am presenting an estimate for 1986 of the Minimum-Necessary time value for housework in Spain, which is explained in epigraph B of that Section.

However, the variant Cost by Function Method is the one that has the support of the majority of experts in national accounting. This method consists in the valuation of time spent on specific household chores (cleaning, child care, cooking, clothing care and so on) at an hourly wage of persons (a cleaner, a baby-sitter, a cook...) performing the same task in the market.

This method calls for a great amount of statistical information, especially that which refers to time-budget data and wages. Naturally, the quality of the results obtained will depend to a great extent on the craft and skill performed in the matching of market occupations with their household function equivalents.

The measuring of time-inputs that are spent on domestic chores present extremely difficult conceptual and statistical problems. With regard to the latter, it seems that for most countries there are no official data on the allocation of time spent at home. Generally, the quality of the existing information is mediocre and the data on time use are very sensitive to even relatively minor variations in procedures of data collection (1).

The conceptual problems caused by the wide variety of services that a housewife carries out are also very big. If we consider that some of the housewife's time spent on household chores takes on an element of choice (time added to that necessary) because of the direct utility it gives to her, then it might be justifiable to introduce the concept of the Minimum-Necessary time for housework. This concept, which is difficult to estimate empirically, could be used to obtain a Minimum-Necessary time value for household work. Hawrylyshyn thinks that 'in practice, it might be approximated by the time spent by women who are also engaged on the market, and must thus be more efficient in their housework' (2).

(1) E.K. Schenck: 'The Time budget interview. The Use of Time: Daily activity of urban and suburban populations in twelve countries' European Coordination Centre. The Hague 1972.

(2) O. Hawrylyshyn. 'Towards a Definition of Non-Market Activities'. The Review of Income and Wealth. 1977. No 1. p. 91

Apparently, the high number of hours that Spanish housewives spend on housework according to the data from the Survey on Domestic and Family Inequality could be interpreted as a sign of the low productivity per hour spent in housework and of the outstanding importance that leisure (1) has in the Spanish housewives' housework. Whether this interpretation is right or not is very difficult to test empirically. If it is accepted as quite accurate, then, it would be the lower wage, that is, the houseworker's which would be the most adequate to value the Spanish housewives' hours of work. But, if we are valuing the time spent in household work within The Minimum-Necessary Time approach, I think that the higher wage, that is, the housekeeper's, would be the most appropriate. Naturally, the use of the housekeeper's wage to value the imputed minimum-necessary time for housework is not, in my opinion, more than a rough approximation, compared with the more accurate estimate which would be obtained using The Market Alternative Individual Costs Method. However, this Method requires statistical information which is not available in Spain nowadays.

As shown in Table 8 , using the housekeeper's average hourly gross wage rate for valuing our estimate of the minimum-necessary time for household work (17,420 hours per year), it gives an estimate of 5,226 thousand million pesetas which amounts to 16.36 per cent of the Spanish GDP in 1986.

In using the Opportunity Cost Method. I have set three possible options in order to calculate the net hourly wage rates.

- The Minimum Legal Wage (Statutory Wage)
- The Average Net Earnings.
- The Average Net Earnings for Women.

We suppose that the average female earnings are thirty per cent

(1) What is called 'leisure on the job'

calculated. Table 7 shows our estimate of the 'amount' of household work imputed to the Spanish population in 1986.

TABLE 7

Minimum Necessary Time for Household Work in Spain 1986

<u>Age group</u>	<u>Population (persons)</u>	<u>Volume of housework per day (hours)</u>	<u>Volume of housework per year (million hours)</u>
0-4 at 3 hours each	2,556,532	7,669,596	2,799.4
5-14 at 1.6 hours each	6,323,084	10,116,934	3,692.7
Others at 1 hour each	29,938,739	29,938,739	10,927.6
TOTAL.....	38,818,355	47,725,269	17,419.7

This figure of 17,420 hours is substantially lower than the 34,000 hours coming from Caillavet's estimates.

Within the Market Alternative Method I have chosen two types of household servants representing two different levels of quality and efficiency. The houseworker is representative of the lower quality and efficiency and she/he earns 150 pesetas as an average hourly gross wage rate, whereas the housekeeper represents a higher level of skill and wage. She/he earns 300 pesetas as an average hourly gross rate.

In a sense, the housekeeper produces 'bigger and better' services than the houseworker. The question now is to what extent can we get a more reliable indicator of the value of household work done by the Spanish housewives using the wage of a housekeeper instead of the houseworker's? Let us look at some of the arguments that will enlighten our choice of the most appropriate wage to value the time spent on housework by Spanish housewives.

TABLE 6

Minimum-Necessary Time for housework aimed at children under five

Basic Tasks for children under five

	<u>Minutes per child and day</u>
- Getting children up and dressed	20
- Taking to toilet and changing nappies	20
- Washing and bathing	20
- Extra-time for shopping	10
- Extra-time for meals	40
- Putting to bed	15
- Clearing and cleaning after children	25
- Extra-time for washing, hanging cloths out and ironing	15
- Others (taking to child minder and collecting...)	15
	<hr/>
ALL BASIC TASKS.....	180

Surveys done on mothers with small children show a great variation among families in the time they take to do these tasks. The different 'styles of bringing-up', the standards of hygiene, of feeding and dress which the families try to achieve make longer or shorter the time required to do the basic tasks. On the other hand, household technical equipment such as washing machines, fridges, vacuum-cleaners, disk washers, irons, and so on increases the 'efficiency' of household work. Surely, technical equipment allows for a reduction in the minimum-necessary time. So, taking into account the increases in technical equipment within Spanish households in the two last decades, we set our estimates of the minimum time requirements per child under five to do the basic tasks. (see Table 6).

Therefore, a child under five requires a minimum of three hours of housework to give him the services which are considered basic to his rearing. As we have shown before, this definition of housework in terms of minimum-necessary time tends to exclude elements of household behaviour which directly result in satisfaction or well-being. It is not strange, thus, that the 'amount' of household work obtained with this minimum necessary time approach be notably lower than other estimates (like the one done by Caillavet) relying upon the answers of housewives to questions about their use of time.

For the other two age groups (5-14 and 15 onwards), we consider that the minimum necessary time of housework per person and per day is of 1.6 and 1 hours respectively. Again, it so happens that this estimate is arbitrary. But we hope these figures (3, 1.6 and 1 hours) to be roughly representative of the minimum necessary time of household work per person and per day for the pertinent age group. In applying these standards to a family composed of a married couple with a child under five and another under fifteen, 6.6 hours of minimum necessary time for household work is obtained as a result. It does not seem to be far out of the Spanish reality. If we know the population in each age group minimum necessary time of household work can be

B.- An Estimate of the Minimum-Necessary Time Value of
Household Work in 1986

It is supposed that the 'amount' of minimum necessary time for household work depends on the age structure of the population (1).

The population is divided into three age groups:

- * 0 - 4
- * 5 - 14
- * 15 years onwards.

Now, we specify (2) the basic household tasks which define the household work devoted to children under five:

- getting children up and dressed.
- taking to toilet and changing nappies.
- washing and bathing
- extra-time for shopping
- extra-time for meals (cooking, serving, washing up)
- putting to bed
- clearing and cleaning after children.
- extra-time for washing, hanging clothes out, and ironing
- others (taking to child minder or nursery and collecting, and other unspecified tasks).

- (1) This approach to the measurement of the 'amount' of household work was suggested to me by the reading of C. Clark's article 'The Economics of House-work'. Bulletin of the Oxford Institute of Statistics. May 1958.
- (2) This classification is taken from H. Fawcett and D. Piachaud. 'The Unequal Struggle'. New Society. 20-27 December 1984, p. 473

TABLE 5

ESTIMATES of The Value of housework made by housewives in Spain (1984)

	Average hourly wage rates (pts./hour)	Estimate 1 (Pts. billions)	% PIB	Estimate 2) (Pts. billions)	% PIB
A.- MARKET ALTERNATIVE					
1.- Gross wage of a full time household worker living in	144,75	5.070	20,2	4.881	19,4
2.- Gross wage of a full time household worker not living in	95,83	3.357	13,36	3.231	12,9
3.- Gross wage of a part-time household worker	302,25	10.587	42,1	10.191	40,6
B.- OPPORTUNITY COST					
4.- Average gross earnings	606	21.227	84,5	20.433	81,3
5.- Average gross earnings for women	484,8	16.982	67,6	16.346	65,1

SOURCE.- F. Caillavet. "El trabajo gratuito de las mujeres : de la economía familiar a la economía nacional"; en M. Angeles Durán (ed.). De Puertas Adentro (Ministerio de Cultura. Instituto de la Mujer. Madrid, 1988). p. 443 y 444.

NOTE.- Market alternative estimates do not take into account the social security contributions paid. The rate is 16 per cent.

lower (1) than the average net earnings obtained from The Wages Survey carried out by The National Institute of Statistics.

If we use the average female earnings per hour worked to value the imputed minimum-necessary housework hours, it gives an estimate of 7,926 thousand million pesetas which mean 24.8 per cent of GDP in 1986 (See Table 8).

Finally, if the minimum-necessary time approach is discarded and the actual number of hours devoted to housework are thought to be the best single indication of the amount of services performed (2), 34,000 million annual hours from Caillavet's estimate would be closer to the Spanish reality than my own estimate.

Now, if the average wage per hour for a housekeeper (300 Ptas) is used to value the 34,000 millions annual hours of housework, it gives a total of 10,200 thousand million pesetas which is equivalent to 32 per cent of the GDP in 1986. This result agrees with the estimates of the share of household output in GNP given by several studies (3). In general, the value of household work is about one third the size of GNP. —

- (1) See P. Alcobendas Tirado. Datos Sobre el Trabajo de la Mujer en España (Centro de Investigaciones Sociológicas. Madrid 1983).
- (2) For the defence of this thesis, see K.E. Walker 'Homemaking Still Takes Time'. Journal of Home Economics. 8 October 1969. pp 621-629
- (3) O. Hawrylyshyn. 'The Value of Household Services. A Survey of Empirical Estimates' The Review of Income and Wealth. 1976. No. 2 The United States (with a greater number of Studies). Sweeden, and the United Kingdom were the countries in which this surprising similarity in the value of household work estimates was found.

TABLE 8

Minimum Necessary Time Value of housework in Spain. 1986

	Average hourly wage rates (pts./hour)	Number of hours imputed (millions)	Total Value (Pts./billions)	% GDP
<u>A.- MARKET ALTERNATIVE</u>				
1.- Gross wage of a houseworker	150	17.420	2.613	8,18
2.- Gross wage of a housekeeper	300	17.420	5.226	16,36
<u>B.- OPPORTUNITY COST</u>				
1.- Statutory Minimum Wage	166	17.420	2.892	9,1
2.- Average net earnings	650	17.420	11.323	35,44
3.- Average net earnings for women	455	17.420	7.926	24,80

NOTES.- Market alternative estimates do not take into account the social security contributions.
Net earnings are calculated by deducting a 12,25 per cent (direct taxes paid).